DOCUMENT RESUME

ED 062 261 SO 003 033

TITLE	Sixth Grade Interdisciplinary Packet: Science-Social Studies.
INSTITUTION	Madison Public Schools, Wis.
PUB DATE	[72]
NOTE	60p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Activity Units; Affective Objectives; Anthropology; Cognitive Objectives; *Concept Teaching; Curriculum Evaluation; Curriculum Guides; Elementary Grades; Evolution; Grade 6; Human Relations; *Interdisciplinary Approach; *Physical Sciences; *Socialization; *Social Studies Units

ABSTRACT

This curriculum guide for sixth graders focuses upon "Who is Man?", "Who am I?" and "Man Needs Man" in an interdisciplinary sequence that combines scientific and social studies ideas and theories. It is hoped that this approach will help the pupil shape positive change within himself and his society. Emphasis is upon pupils gaining both conceptual understandings and developmental skills progressively throughout the year. The course is arranged into five units, each listing concepts, objectives, and activities, with outlines on: 1) "Man and Time: How Do we Know?", emphasizing how time duration and sequence can be used to compare events, and, measured and described in a variety of ways; 2) "Man Changes Through Time", stressing evolutionary theory and man's psychological needs; 3) "Decoding a Message from Early Man"; 4) "Man's Similarities to Other Animals", discussing man's unique abilities as reflected in his achievements; his values as reflected in his culture; and, 5) "Man Needs Man" descriptions of mans social organization needs and achievements. Since it is essential teachers evaluate the course a checklist evaluation instrument is included after each unit. (Author/SJM)

ED 062261

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THE MADISON PUBLIC SCHOOLS

Department of Curriculum Development

Madison, Wisconsin

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SIXTH GRADE INTERDISCIPLINARY PACKET
(Science - Social Studies)

Department of Curriculum Development
Madison Public Schools
Madison, Wisconsin

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ADDITIONAL OPEN ENDED EVALUATION SHEETS

RATIONALE - GRADE SIX INTERDISCIPLINARY SCOPE AND SEQUENCE

THE TASK:

The "Middle School," a new name and organization for grades six, seven, and eight, provided an impetus to "take a fresh look at our objectives for early adolescents," and to "focus with greater clarity upon the early adolescent as a learner." These two simple, yet complex charges served as a verbalization of task for the Middle School Interdisciplinary Committee.

HISTORY:

While this charge was basic to the development of curriculum at grades six, seven and eight, there were variations in meaning and impact at each grade level. The organization of the sixth grade in most elementary schools not only encouraged interdisciplinary instruction, it necessitated it. The "historical world cultures" social studies curriculum and the "broad spectrum" science curriculum at grade six were well established. While the sixth grade teacher had always been able to "pick and choose," the scope of the curriculum was, nonetheless, impressive.

Within this context, excellent curriculum materials had been written, both locally and centrally. Within this framework, a number of excellent instructional materials had been developed. Commercial textbook and supplemental materials also made many most positive contributions to the program.

CONCLUSIONS:

An examination of the existing scope and sequence and instructional practices at grade six revealed the following:

A. The reorganization of existing content would result in a "greater focus upon the early adolescent."

B. A change in objective statements would result in a program which was more appropriate for the early adolescent.

SUGGESTED CHANGE:

It was felt that a content organization which is depicted by the following "flow chart" would provide a logical, tailored sequence of interdisciplinary possibilities:

RATIONALE - GRADE SIX (Continued)

Grade Six Interdisciplinary Possibilities

MAN AND TIME:

- TIME DURATION AND SEQUENCE
- MEASUREMENT AND DESCRIPTION OF TIME
- THE VALUE OF TIME
- TIME AND MAN'S BEHAVIOR
- TIME AND CULTURE

↓

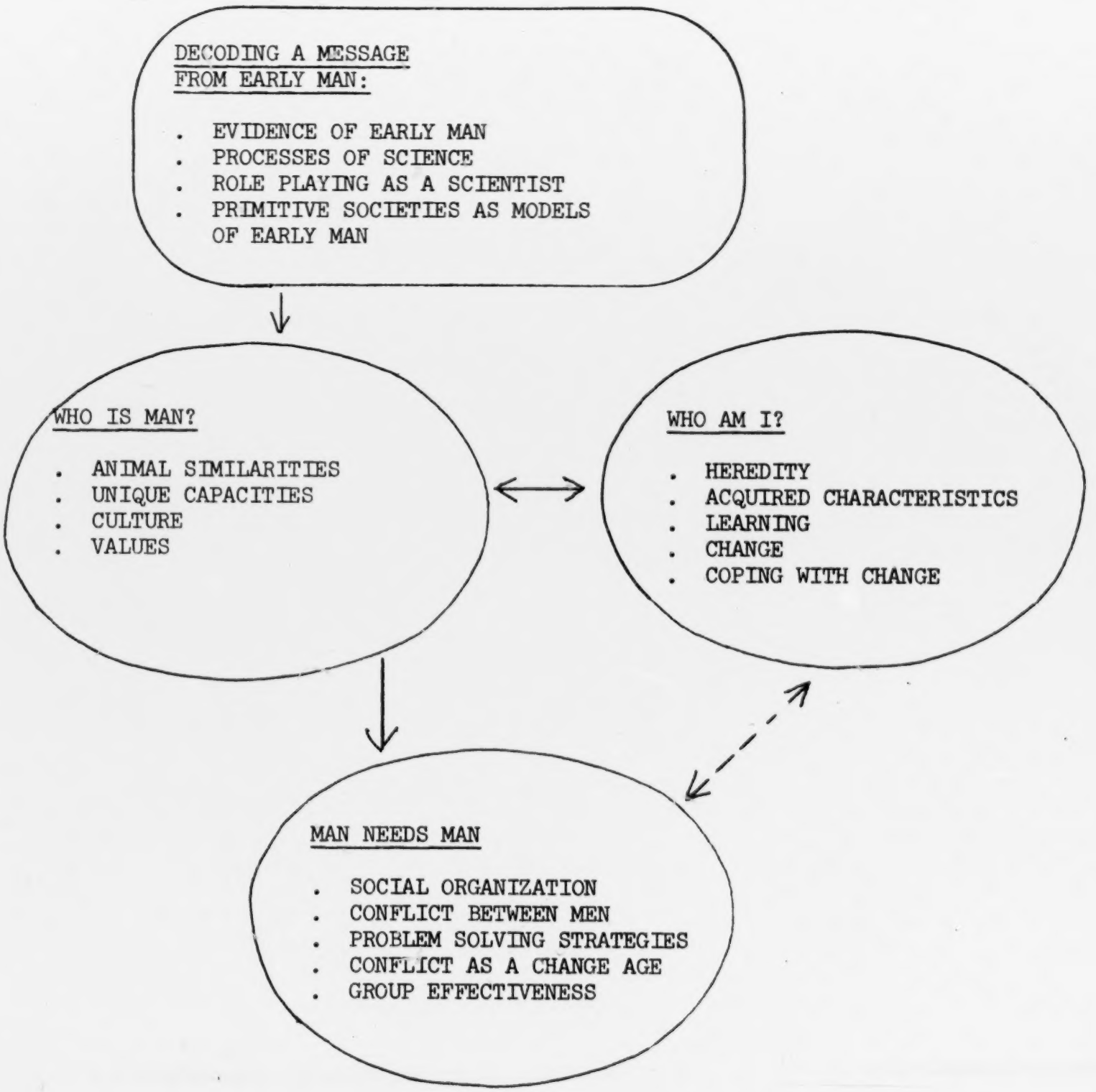
MAN CHANGES THROUGH TIME?:

- THEORIES OF ORIGIN OF MAN < SCIENTIFIC / NON-SCIENTIFIC
- DARWIN
- ADAPTATION
- NATURAL SELECTION
- LIFE CYCLES
- MAN'S NEEDS

↓

RATIONALE - GRADE SIX (Continued)

Grade Six Interdisciplinary Possibilities



RATIONALE - GRADE SIX (Continued)

The committee was convinced that this organization would also result in a more systematic application of conceptual understandings and developmental skills, vertically, as the year progressed. A number of unifying threads were woven both vertically and horizontally throughout. They include:

- Asking appropriate questions
- Making inferences from artifacts
- Identifying patterns in data
- Analyzing similarities and differences in data
- Identifying multiple causation in phenomena
- Analyzing cause and effect relationships in physical and social phenomena
- Forming conclusions from data
- Forming generalizations from data
- Testing generalizations with new data inputs
- Extending concepts through exposure to new data
- Analyzing values involved in differing positions on an issue
- Identifying one's own values on an issue
- Predicting consequences

The increased emphasis placed upon the "Who is Man?", "Who Am I?", "Man Needs Man", phases of the curriculum is intentional. This focus, it seems, is essential if the child is to cope effectively with conflict and confusion, and from it, shape positive change within himself and his society.

EVALUATION - 6th Grade Interdisciplinary Materials

In order to determine the effectiveness and validity of this material, it must be evaluated in terms of specific criteria. It is hoped that evaluation will be an ongoing process as the material is used during the year. For this reason, a checklist is provided beside the objectives within the "working paper."

OPEN-ENDED EVALUATION

An additional, more open-ended evaluation instrument is included at the end of each unit. Specific comments about objectives, concepts, successful activities, sources of material, additions or deletions, or future curricular direction should be made here.

OBJECTIVE EVALUATION

It is essential that the teacher evaluate the objectives of the unit. It would be most valuable if the student would also evaluate the objectives. The following criteria, numbered 1-5, corresponds with the aforementioned checklist:

CRITERIA

1. It was written at the student's level of maturity, comprehension, or interest.
2. It suggests a usable activity or available materials.
3. It communicated an instructional direction.
4. It was readily evaluated.
5. It was successfully accomplished by the majority of students.

PROCEDURES

It is not expected that all objectives will be evaluated in all categories. Some objectives may not be applicable to the unit. If so, place a check (✓) in column "0" along side those objectives which are not applicable.

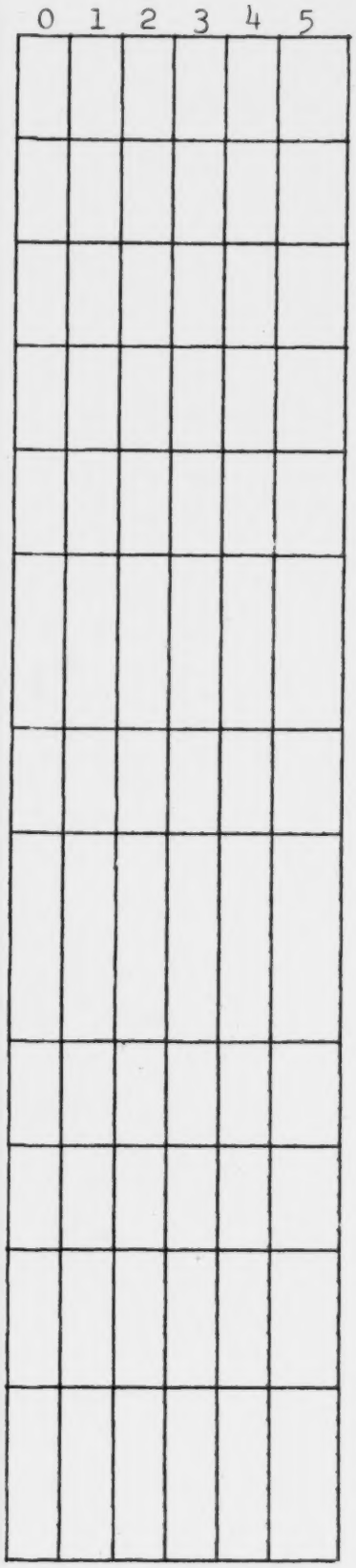
Similarily, the student may find that certain criteria have greater meaning for him than others. If only selected criteria are applicable, place check mark opposite the objective and within the boxes of the appropriate criteria. In this case, leave inappropriate criteria blank.

Should a given objective fulfill all five criteria, a check mark should be placed in each box (1-5).

Within this packet, two objective evaluation sheets are provided. One copy is intended for the teacher. The second copy may be used as a ditto master, should the teacher choose to have students evaluate.

MAN AND TIME: HOW DO WE KNOW?

MAN AND TIME: HOW DO WE KNOW?



II. Objectives:

A. Time duration and sequence can be used to compare events.

1. Given a set of scrambled events in a story, the student is to order them according to time sequence.

2. The child is able to apply the idea of superposition to the relative age of rock strata.

3. Given a list of events, the student will be able to arrange them in the order in which the event could or would occur.

4. The student will be able to (apply) the ideas of time duration and sequence to.

5. The student will be able to order a set of words which describe time numerically from least to greatest duration.

B. Time can be measured and described in a variety of ways.

1. The student is able to list periodic phenomenon which can be used to measure a duration of time.

2. The student is able to devise and construct an instrument with which he can tell time.

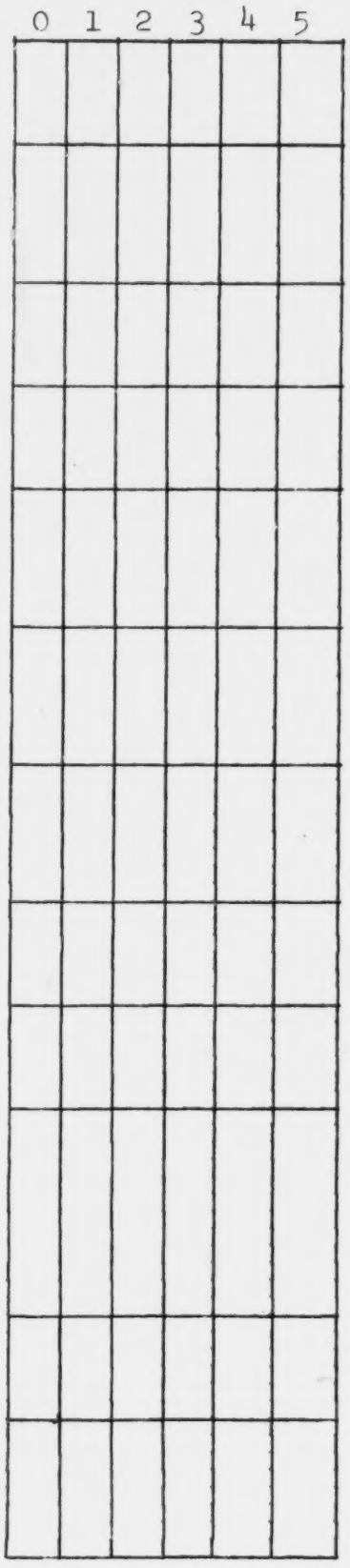
3. The student will evaluate timing device in terms of: (a) How small a time duration will it measure? (b) What type of events can it measure, (c) How durable? (d) How portable? (e) How universally applicable is it? (f) How accurate?

4. The student is able to illustrate daily time usage by means of a time line or graph.

5. The student is able to identify all terms which denote or connote time within a story.

6. The student is able to rank descriptive "time" words which are not numerical with respect to time duration or sequence. Suddenly, soon, instantaneously, never.

7. The student is able to demonstrate, he comprehends the terms used to describe time by defining and/or ordering annual, bi-annual, quarter-annual, decade, century, centennial, generation, fortnight.



C. The value of time is relative: It is an important factor in man's behavior.

1. The student is able to demonstrate his understanding of the importance of time as being relative by:

   a. Identifying and discussing two examples in his experience when "time flew" and also when "time dragged."

   b. Developing generalizations which state the conditions where 1) "time flies" and 2) "time drags.

2. The student is able to make a judgment whether time was a critical factor in determining the outcome of the story.

3. The student is able to compare the child's use of time with that of brothers, sisters, parents, peers, professions, age groups.

4. The student is able to analyze similarities and differences in usage of time by different age groups, individuals, or occupations.

5. The student is able to analyze time as a factor affecting emotion (i.e., anxiety, anticipation, frustration, fear, boredom, anger.)

6. The student is able to plan to use a block of time in school efficiently.

7. The student is able to plan for a long-range assignment (minimum 3 weeks).

D. The value of time is reflected in a people's culture.

1. Using a variety of sources, the child is able to support or refute the statement: "The value of time is reflected in a people's culture." "The more technical a culture, the more time-conscious the culture."

2. The student is able to list time-saving devices found in culture.

3. The student is able to identify artifacts, customs, laws and words within a culture which reflect the value of time within that culture.

MAN AND TIME: HOW DO WE KNOW?

I. Concepts:

A. Time duration and sequence can be used to compare events.

B. Time can be described in a variety of ways.

C. The value of time is relative; it is an important factor in man's behavior.

D. The value of time is reflected in a people's culture.

1. Language: "decade, century, now, annual, . . ."

2. Artifacts: wrist watches, public clocks, schedules, parking meters.

3. Laws: daylight savings time, leases, voting age, draft age, etc.

II. Objectives:

A. Time duration and sequence can be used to compare events.

1. Given a set of scrambled events in a story, the student is to order them according to time sequence.

2. The child is able to apply the idea of superposition to the relative age of rock strata.

3. Given a list of events the student will be able to arrange them in the order in which the event could or would occur.

4. The student will be able to (apply) the ideas of time duration and sequence to:

5. The student will be able to order a set of words which describe time numerically from least to greatest duration.

B. Time can be measured and described in a variety of ways.

1. The student is able to list periodic phenomenon which can be used to measure a duration of time.

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4. The student is able to illustrate daily time usage by means of a time line or graph.

5. The student is able to identify all terms which denote or connote time within a story.

6. The student is able to rank descriptive "time" words which are not numerical with respect to time duration or sequence. Suddenly, soon, instantaneously, never.

7. The student is able to demonstrate, he comprehends the terms used to describe time by defining and/or ordering annual, bi-annual, quarter-annual, decade, century, centennial, generation, fortnight.

C. The value of time is relative: It is an important factor in man's behavior.

1. The student is able to demonstrate his understanding of the importance of time as being relative by:

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7. The student is able to plan for a long-range assignment (minimum - 3 weeks).

D. The value of time is reflected in a people's culture.

1. Using a variety of sources, the child is able to support or refute the statement: "The value of time is reflected in a people's culture." "The more technical a culture, the more time-conscious the culture."

2. The student is able to list time saving devices found in culture.

3. The student is able to identify artifacts, customs, laws and words within a culture which reflect the value of time within that culture.

III. Activities:

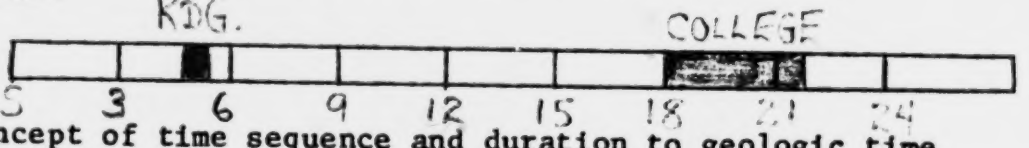
A. Time duration and sequence can be used to compare events.

1. Have students arrange events in school year, their own life span in sequence. These could be put on cards for the student to manipulate.

2. Class demonstrates superposition using paper, hands stacked one on top of another, sedimentary jug or container with a variety of sediments allowed to settle at different times.

3. Create time line showing important events in terms of duration on time line.

Example:



4. Extend concept of time sequence and duration to geologic time by having child plot events on an adding machine tape. (See Investigating the Earth, Teacher's Edition, Part II, pages 475-478.)

5. Two films, Time-lines and Events - F 2973-BAVI, and About Time-bell Telephone both provide excellent colored animated explorations of time.

6. Excellent transparency/slide materials on geologic time are available local materials production, Madison Public Schools.

7. Have children "order" a set of signs which depict major events in geologic time or major events in human history in terms of sequence and/or duration.

8. The child should construct a time-line which indicates the time-duration of the following historical cultures: Primitive man, Egyptian, Greek, Roman, Middle Ages, Renaissance.

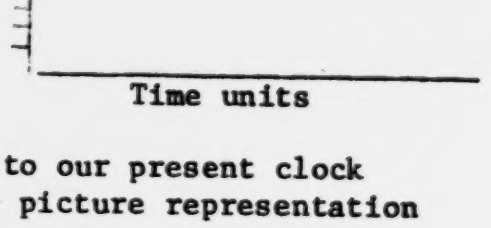
B. Time can be measured and described in a variety of ways.

1. Using a variety of sources the child will make list of periodic phenomenon which can be used to measure time assuming there were no sophisticated timing devices available. Example: pendulum, pulse, sand flowing, seasons, and burning candle.

2. Research and discuss "Biological Clocks". Students might investigate hibernation and migration phenomenon of animals or seasonal changes in animals. Science periodicals are most valuable courses on such topics.

3. Students can construct "homemade" time pieces. This activity might be extended as a graphing exercise as follows:

No. of pendulum swings	No. of heart-beats	No. of drips of H_2O clock



4. Students might trace developments that led to our present clock through ancient civilizations - time line - picture representation of advances in timing devices.

   Class members choose a timing device from ancient civilizations and prepare a sales pitch to convince class to adopt it as a standard clock.

5. Using a story, the student can:

   a) Identify all terms which denote or connote time.

   b) Determine (judge) whether time was a critical factor in the outcome of the story.

6. The student can compile and order a list of non-numerical words which describe time, or compile and order a list of words that numerically describe time.

7. Provide the student with a list of time units (second, hour, year, millenium etc.). Have him identify events which would be timed using each unit.

C. The value of time is relative: It is an important factor in man's behavior.

1. The child will sort out the conditions that are present when time "flies" and time "drags". (This will be done by class discussion.)

   During a class discussion the child will relate experiences he has had in which time appeared to "fly" and "drag".

   The child will apply these generalizations by selecting events from a newspaper which illustrate the generalizations. Suggestions: man in death row; man in war; astronauts - equipment failure; communication failure.

2. By means of a time-line or graph show the important events in your life indicating the time duration of each in which a certain amount of time was crucial to the outcome, i.e., bombing of Pearl Harbor, etc.

3. Construct a chart-schedule of time usage for members of the family. Compare these in terms of work - recreation, sleeping, eating.

4. Volunteers will be selected to estimate a short period of time while:

   a) Being isolated from the group

   b) Being involved with the group (class) in an interesting activity.

   A comparison of "a" and "b" will suggest the impact of socialization with one's concept of time.

   The child will poll siblings, parents, and peers regarding the amount of time they devote to the following per day:

   a) Sleeping

   b) At work

   c) In recreation

   d) Household tasks or chores

   Analyze similarities and differences in usage of time as reported by these different parties.

5. The student will then graph percent of time spent by each person in a.b. and c.

   The child will describe his thoughts and feelings in a theme entitled:

   a) My Longest Day

b. My Longest Moment

c. The Day That Seemed Like an Hour.

The child will assume the role of the primary character in the following situations and describe how time influences his thoughts and feelings:

a) A man on death row with 1 hour to live

b) A soldier in a trench in Viet Nam who has just received orders to move ahead into a volley of gunfire.

c) While sleeping alone in a strange house strange noises are heard.

d) An astronaut in space whose equipment is malfunctioning.

6. The child will make a list of personal goal-directed tasks that he could accomplish within a period of 5 to 15 minutes.

Upon making this list, he should be given time to accomplish same.

Each student will assess his own productivity by orally reporting to the class and comparing his results with those of his classmates.

This activity should be repeated regularly until a satisfactory degree of proficiency is obtained.

7. The child will devise and write out a plan he can use while fulfilling a long range assignment extending one week or more.

8. The child will be required to keep a time-diary by recording his activities every 30 minutes during the course of one day.

He will analyze this diary in terms of:

a) His most productive time

b) Develop a rationale which accounts for the productive and non-productive periods.

9. The child will imaginatively construct a day in his life where no one operates on a time schedule. This may be either a written or oral exercise.

10. The class will be asked to estimate a short period of time at (1) the beginning of a day and (2) at the end of the day. The students will be asked to indicate by raising their hands when they think the designated amount of time has transpired. When half of the class has indicated the designated time has passed, the teacher will note the actual time as measured by a stop watch.

A comparison of (1) and (2) will suggest the impact of time of day with one's concept of time.

D. The value of time is refelcted in a people's culture.

1. The child should list and compare time-measuring devices today with those appearing in historical cultures.

The child should make a decision about which culture had the most timing devices.

Should make generalizations as to why one culture would have more time measuring devices than another culture.

2. The student can compile a list of business and legal transactions which are based on the notion of time. For example: day-light savings time, lease, rental agreements, voting, drafting and driving ages, movie admission designations of age, etc. (parking meters)

3. Using a variety of sources, the student can compose a paragraph which supports or refutes the following statement: "The value of time is reflected in a people's culture. The more technical a culture, the more time-conscious the culture."

4. The student can analyze familiar quotations dealing with time: "Time Flies."

   "A stitch in time saves time."

   (Bartlett's or similar sources will be helpful)

OPEN ENDED COMMENTS

I. UNIT: _____

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II. CONCEPTS: _____

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III. OBJECTIVES: _____

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IV. MATERIALS: _____

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V. ACTIVITIES: _____

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VI. COMMENTS: (USE BACK IF NECESSARY) _____

_____

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MAN CHANGES THROUGH TIME?

MAN CHANGES THROUGH TIME?

I CONCEPTS:

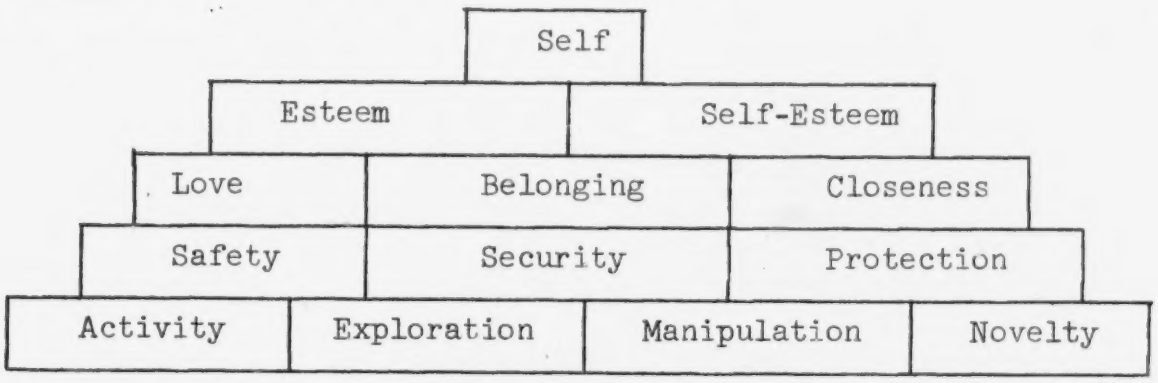
A. INDIVIDUAL VARIATION, MUTATION, ADAPTABILITY, AND GEOGRAPHICAL SEPARATION ARE IMPORTANT NOTIONS IN THE EVOLUTIONARY THEORY.

B. EVOLUTIONARY THEORY SUGGESTS THAT LIVING THINGS CHANGE OVER LONG PERIODS OF TIME.

C. EVOLUTIONARY THEORY SUGGESTS A COMMON ORIGIN FOR ALL MEN.

D. THERE ARE NON-SCIENTIFIC THEORIES OF THE ORIGIN OF MAN.

E. MAN'S PSYCHOLOGICAL NEEDS APPEAR TO REMAIN CONSTANT THROUGHOUT TIME.



F. MAN HAS HAD A DRAMATIC EFFECT ON LIVING SPECIES.

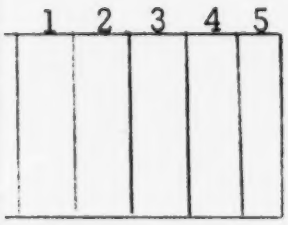
1. Population

2. Genetic interference

3. Domestication of plants and animals

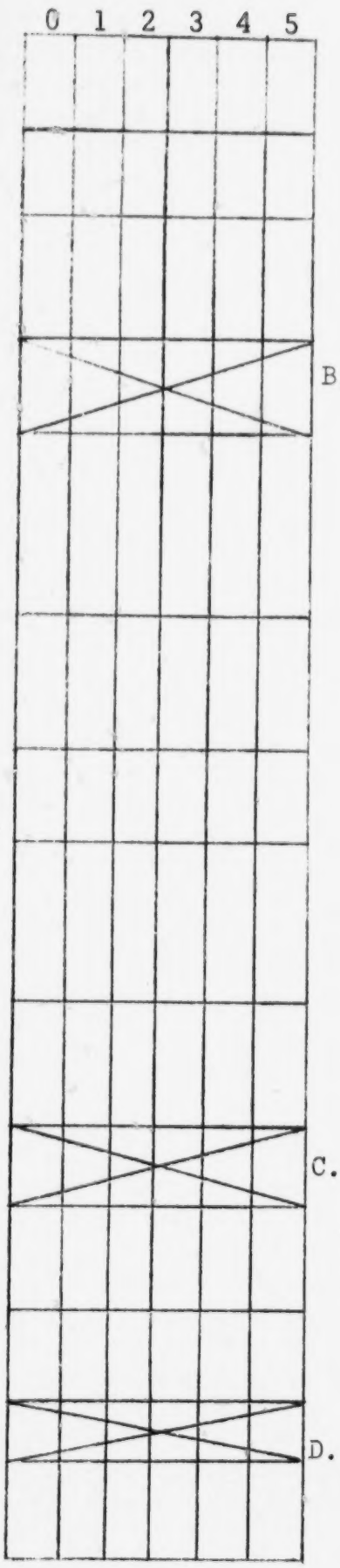
4. Habitat interference

II OBJECTIVES



A. INDIVIDUAL VARIATION, MUTATION, ADAPTABILITY, AND GEOGRAPHICAL SEPARATION ARE IMPORTANT NOTIONS IN THE EVOLUTIONARY THEORY.

1. Is able to identify structural variation within a class of animals, and explain how and why it might have occurred, i.e., beaks and feet of birds, teeth of mammals, fins of fish, bone structure.



2. The child is able to suggest and verify factors which cause an animal to be extinct or near extinct.

3. Cite, through examples, evidence which supports the notion of natural selection.

4. Is able to explain the role of the following factors in evolutionary theory: individual variation, mutation, adaptability, and geographic separation.

B. EVOLUTIONARY THEORY SUGGESTS THAT LIVING THINGS CHANGE OVER LONG PERIODS OF TIME.

1. The student should be able to identify structural similarities or patterns in a selected group of animals. For example: skeletal patterns, symmetry, number and position of appendages, muscular arrangements, presence of hair, scales, etc.

2. Given a selected set of animal species, the student is able to order and justify this order from simple to complex.

3. Given a collection of animals, the child should be able to devise three different classification schemes.

4. Given three distinct habitats, compile a list of animals which could be expected to reside in the habitat. The student should be able to explain why the list of animals has been associated with a particular habitat.

5. The student is able to compare and contrast the physical, mental, and social capacities of three "types" of caveman. (Java, Peking, Neanderthal, Cro-Magnon, Africas).

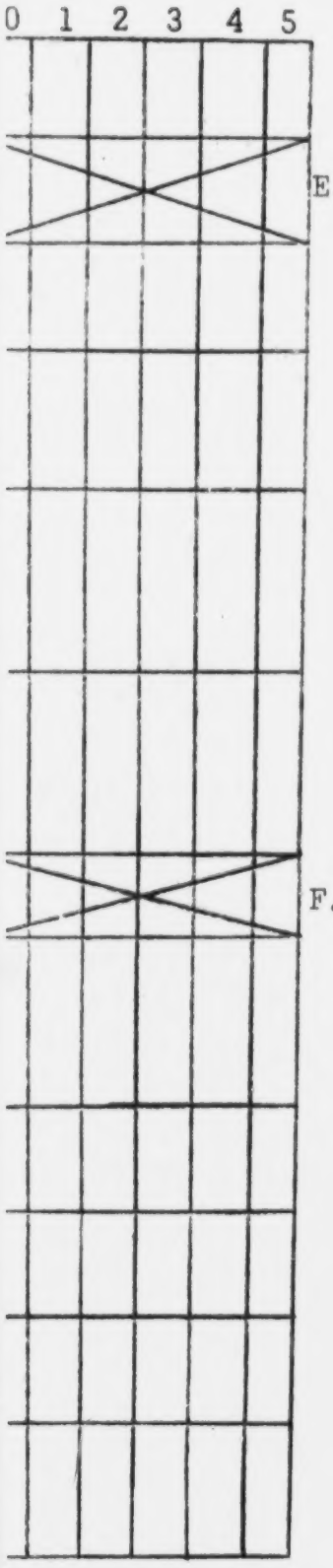
C. EVOLUTIONARY THEORY SUGGESTS A COMMON ORIGIN FOR ALL MEN.

1. Given the premise that all men have derived from a common origin, the child should be able to list evidence which supports and refutes the notion.

2. The student is able to explain how racial variation within human species might have occurred.

D. THERE ARE NON-SCIENTIFIC THEORIES OF THE ORIGIN OF MAN

1. Is able to appreciate that there are a number of theories regarding the origin of man.



2. Is able to compare and contrast religious theories which explain the origin of man.

E. MAN'S PSYCHOLOGICAL NEEDS APPEAR TO REMAIN CONSTANT THROUGHOUT TIME.

1. He is able to identify those universal needs and feelings which are common to all mean at all times.

2. Given a universal human need of the child's choice, he is able to gather and cite evidence to support its universality.

3. Given a set of needs within historical culture, the child is able to order these needs from least to most important for that culture. He should be able to justify this ordering.

4. Given a set of universal human needs, the child should be able to order a set of needs from least to most influential with respect to his own life and provide rationale upon which the ordering is based.

F. MAN HAS HAD A DRAMATIC EFFECT ON LIVING SPECIES.

- Population
- Genetic interference
- Domestication of plants and animals
- Habitat interference

1. The student is able to identify factors which affect population.

2. The student is able to cite examples of human interference with natural hereditary processes.

3. The student is able to evaluate the role of "domestication" upon the progress of man.

4. The student is able to give an example and explain the relationship between man's interference with a species' habitat and its population.

III ACTIVITIES

A. INDIVIDUAL VARIATION, MUTATION, ADAPTABILITY AND GEOGRAPHIC SEPARATION ARE IMPORTANT NOTIONS IN THE EVOLUTIONARY THEORY.

1. Chance selection of fittest activity:
Using clay balls or ping pong balls which represent a species of animals living in the past, randomly dent or

the coast of South America. It shows rare footage of animal and plant life in the Galapagos Islands.

8. A locally available film, F3151-Evolution of Man (14 min., color) also provides a graphic explanation of the theory of evolution.

9. These activities aid perception into adaptation in evolutionary theory.

Making a Table of Information: How Organisms Are Adapted to the Environment. (On Your Own) How are plants and animals that live in land communities adapted for life in particular types of biomes? Indicate the type of environment under the heading "Biome." Then search out some of the special adaptations of the organisms listed and enter this information under the heading "Special Adaptations."

ORGANISM	BIOME	SPECIAL ADAPTATIONS
Reindeer moss		
Spruce		
Orchid		
Ptarmigan		
Bromeliad		
Kangaroo rat		
Teddy bear cholla		
Toucan		
Two-toed sloth		
Tapir		

Library Research: Distribution of Animals in a Variety of Environments. Many living things can survive in a variety of environments. There are, for example, some animals that are found in almost all parts of the U. S.

1. In an encyclopedia or wildlife book, search out maps or other information about the distribution of the following:

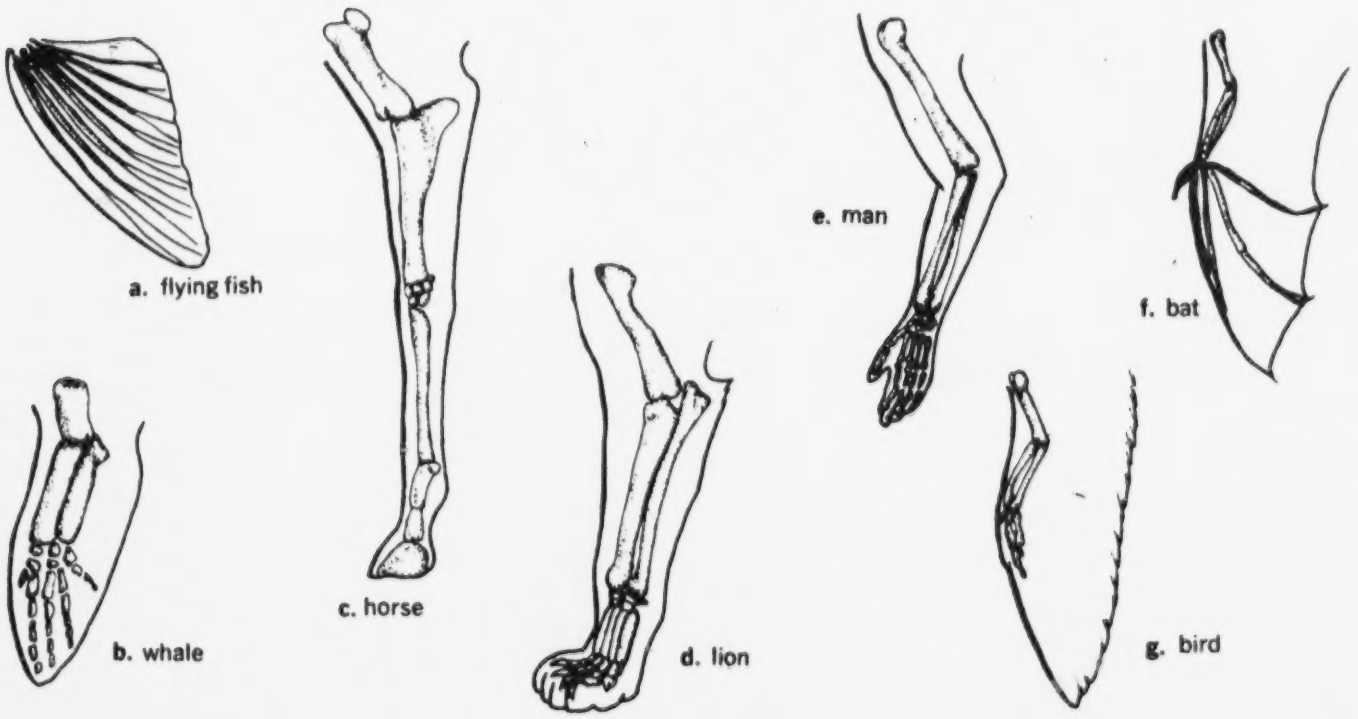
a. mallard duck	f. gray fox	j. otter
b. snipe	g. white-tailed deer	k. beaver
c. striped skink	h. muskrat	l. wild turkey
d. raccoon	i. red fox	m. coyote
e. morning dove		

2. Which animal in the list is most widely distributed in the United States? _____
   In your state? _____

3. Rearrange the list above to put it in the proper order with the animal most widely distributed in the United States first.

a. _____	f. _____	j. _____
b. _____	g. _____	k. _____
c. _____	h. _____	l. _____
d. _____	i. _____	m. _____
e. _____		

10. You have been investigating how living things are adapted to their environment. The drawings below represent the forelimbs of various animals. Analyze the structures shown and refer to them as you answer the questions that follow. (Use references as aids in your analysis.)



1. Do the structures appear to be similar in any way? Explain.

_____

_____

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2. How is the forelimb of the horse adapted for its function?

_____

_____

How is it different from the others? _____

_____

3. Compare the forelimbs of the bat and the bird. How are they similar? _____

_____

_____

How are they different? _____

_____

B. EVOLUTIONARY THEORY SUGGESTS THAT LIVING THINGS CHANGE OVER LONG PERIODS OF TIME.

1. Students should be exposed to classification of animals which scientists have used. (i.e., John Ray, Carolus Linnaeus)

   The students should collect pictures of animals, obtaining as large a collection as possible.

   Each child will classify his collection under the headings: presence of hair; color of animal; similar skeletal patterns; etc.

   ESS BONES PICTURE BOOK - McGraw-Hill, Used in study of structures of animals.

2. Give a set of species to the various groups in the class. They will construct a wall chart, placing the pictures in order from simple to complex.

flatten some of the balls. Explain that these dents represent certain characteristics held by a part of this species.

Create circumstances in which the balls roll; those dented will roll slower; the slower members of this specie might then be preyed upon.

Possibly the rolling could represent the life span of members of a specie. Those that roll fastest die faster than those having dents. The dented members of this specie then could reproduce and pass their characteristics over a longer period of time.

2. Use gravel of various sizes to represent characteristics of a specie. Screen the gravel. The screen represents environmental conditions unfavorable to a number of the specie (gravel) having a characteristic of size. Those screened out then would not be able to pass this characteristic on.

3. Toothpicks represent specie of animal. Color a large number of toothpicks red, orange, green, black, etc. Throw toothpicks in grass or on red, green, blue paper (on some background that a number of toothpicks blend in). Student becomes predator of some color or colors of toothpicks. Time students--count number of toothpicks left that then would reproduce. Speculate on how the specie might change as a result.

4. Using a variety of sources, the child should explain the role of the following factors in evolutionary theory: individual variation, mutation, adaptability, and geographic Separation. He should use examples in his explanation of each factor.

5. The child should select an animal that is extinct or near extinct.

   a. Through research, describe the conditions when the animal was in its "prime."

   b. Determine man's role in the extinction or near-extinction.

6. Reading of the book, Voyage of the Beagle, Harper Row, edited by Selsam, will provide the student with observations and conclusions from Darwin's point of view.

7. A BAVI film, Darwin and the Theory of Evolution (6890, 14 min., color $5.00) presents Darwin's observations of

3. Each child will classify his collection using a rationale which is logical to him.

   The children will then be asked to identify the rationale used by others in grouping the animals.

   Make a class list of the various ways in which animals were classified.

   The class should analyze grouping rationale with respect to the criteria used.

4. The child should select an animal of his choice, seek to find out the conditions which would support that animal, and finally, indicate the geographic location or locations where this animal is found.

   Compare, by means of constructing maps, the world distribution of the given animal and man.

   The child should devise a series of reasonable explanations as to the difference in the two maps.

   Given a habitat via pictures and other media, the child should create an animal describing its structure and behavior which could thrive in the habitat.

   Using pictures from magazines or newspapers, the child should select an animal, construct a collage which transplants this animal to a foreign habitat. He should point out and describe the difficulties the animal would have in adjusting to this environment.

5. The child should create a time-line showing how man has changed physically through the ages according to the evolutionary theory.

   Using print-out materials from Title III, the student will see the progression of man socially.

   View film from local materials
   F-3092 30 min. A Million Years of Man
   Traces man in this time span.

C. EVOLUTIONARY THEORY SUGGESTS A COMMON ORIGIN FOR ALL MEN.

1. The film F1109, Color of Man, provides an excellent hypothesis on how racial variation in a single human stock might have occurred.

2. Compare and contrast physical characteristics, physical and emotional needs, and social behavior of representative racial groups.

3. Students might evaluate the statement, "Variations in human appearance have occurred as a result of adaptation to different surroundings."

D. THERE ARE NON-SCIENTIFIC THEORIES OF THE ORIGIN OF MAN.

1. Children could be exposed to a variety of religious theories regarding the origin of man via appropriate resource people. Example: Christian minister or priest, Jewish Rabbi, etc.

2. After hearing views on the origin of man from the various sources, the students should list those that hold similar and dissimilar viewpoints through class discussion.

E. MAN'S PSYCHOLOGICAL NEEDS APPEAR TO REMAIN CONSTANT THROUGHOUT TIME.

1. Each child should make a list of needs and feelings that are a part of his life, and a class list of feelings and needs which are common to all members of the class.

   From this list, the child should identify the needs and feelings which appear to have been common to all men at all times.

2. The children should choose one of the universal human needs identified and gather and cite two pieces of evidence from four different cultures to support its universality.

3. Order, in terms of a specific historical culture, from least important to most important. Describe how needs are interactive upon each other; how they determine happiness of an individual.

4. The child should order and justify the needs appearing in the class list with respect to his own life. Give the rational. The child should pick a historical culture and order and classify these human needs from least to most important giving his reasoning.

   Using the class list of feelings and needs, the child should illustrate what each of these means to him via cartoons, pictures, etc. For example: "Security is a nite lite."

Using a historical culture of his own choice, the child should repeat the above activity.

F. MAN HAS HAD A DRAMATIC EFFECT ON LIVING SPECIES.

- Population
- Genetic interference
- Domestication of plants and animals
- Habitat interference

1. Acquire statistics of growth of Madison or other cities; increase or decrease in percentage of population, and develop a list of factors that both attracted people to the city or away. (industry, attractiveness, cultural, lakes, etc.)

   Through class discussion, identify how birth control or lack of it results in population.
   (Site different countries, such as Peru, India, etc.)

   View film F-327 Population Ecology.

2. Discuss how man interferes with the natural heredity process and possible outcomes.

3. Present question on why man domesticated animals and plants. For example, ancient civilizations. Then determine how this enabled man to develop his society.

4. View F-120 Nature's Half Acre Disney 1953, 33 min.
   View F-3248 The World Around Us McGraw-Hill, 1967, 12 min.

   After viewing the films, have discussion on what happens when man interferes with species' environment. Some groups can research specific areas.

BIBLIOGRAPHY

FILMS

F-3092	A MILLION YEARS OF MAN	30 minutes
F-3151	EVOLUTION OF MAN	14 minutes
	Darwin's theory and the discovery and reconstruction of pre-human fossil	
F-327	POPULATION ECOLOGY	
F-120	NATURE'S HALF ACRE	
F-3248	THE WORLD AROUND US	

BOOKS ESS BONE'S PICTURE BOOK. McGraw-Hill

TITLE III MATERIALS

Summary of Old World Prehistory--chart
Evolution--Kit

OPEN ENDED COMMENTS

I. UNIT: _____

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II. CONCEPTS: _____

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III. OBJECTIVES: _____

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IV. MATERIALS: _____

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V. ACTIVITIES: _____

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VI. COMMENTS: (USE BACK IF NECESSARY) _____

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DECODING A MESSAGE FROM EARLY MAN

DECODING A MESSAGE FROM EARLY MAN

I. CONCEPTS

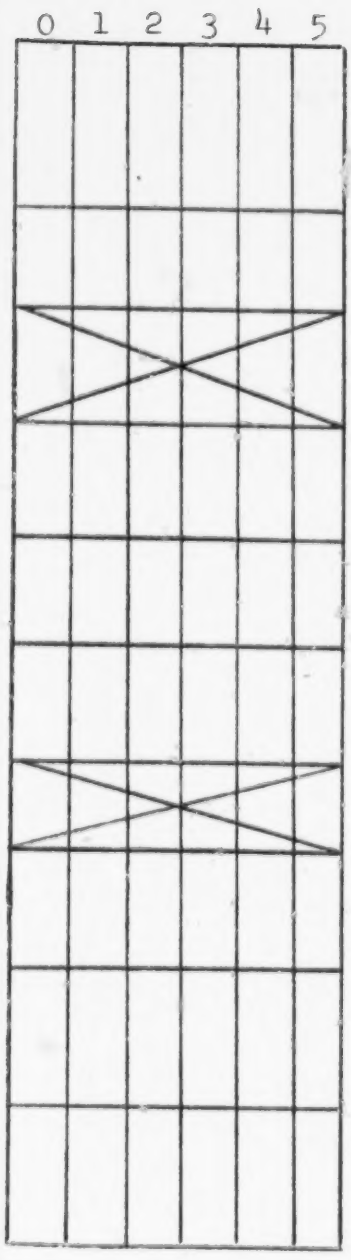
A. Many sciences contribute to our knowledge of man's past.

B. Scientists must use a variety of evidence to theorize about the past.

C. Scientists employ similar processes in their pursuit of knowledge of the past.

D. Present day primitive societies serve as models in the investigation of life styles of early man.

II. OBJECTIVES



A. Many sciences contribute to our knowledge of man's past.

1. The child is able to list contributions which the following scientists might make to the knowledge of the past: archeologist, anthropologist, paleontologist, map maker, historian.

2. The student will select and explain how scientists influence change in theories about man's past.

B. Scientists must use a variety of evidence to theorize about the past.

1. The student should be able to develop inference from artifacts.

2. The child is able to present evidence to support inferences about artifacts.

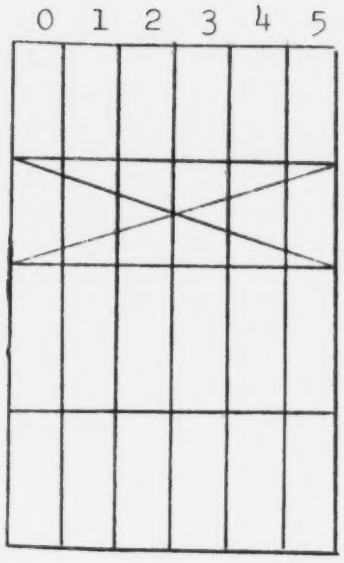
3. Given a collection of artifacts and their locations, the child can select appropriate dating methods.

C. Scientists employ similar processes in their pursuit of knowledge of the past.

1. The student is able to identify personal and professional attributes of a scientist.

2. The student should analyze his personal traits in terms of those which are valuable to one engaged in a scientific endeavor.

3. Given a model set of field notes, the child is able to identify the kinds of information essential to keeping comprehensive records.



4. The student should be able to communicate the experiences of a field trip through a set of written records which fulfill the criterion developed by the class.

D. Present day primitive societies serve as models in the investigation of life styles of early man.

1. The child is able to compare and contrast present day primitive culture with a primitive culture which has vanished long ago.

2. The student is able to identify factors within contemporary primitive cultures which serves as clues to the life styles of early primitive man.

III. ACTIVITIES

A. Many sciences contribute to our knowledge of man's past.

1. Listen to the tape, DIGGING UP THE PAST, then hold class discussion to extract the contributions the archaeologist and anthropologist make to the knowledge of the past. Have an archaeologist or a student of archaeology visit the classroom to tell the students about his work. View film DR. LEAKEY - THE DAWN OF MAN.
Collect a series of present-day artifacts. Ask the students to imagine that an anthropologist discovered these 2,000 years from now. What would he and other social scientists (archaeologists, palentologists, map-makers, and historian) be able to infer about our way of life.

2. Provide students with name of scientists who hold theories about man's past. The student will select three and present his findings on the theories, i.e., how they differ. Presentation may be oral or written. (Darwin, Lamarck, etc.)

B. Scientists must use a variety of evidence to theorize about the past.

1. A House of Ancient Greece Kit may be used.

2. Dr. Leakey - The Dawn of Man.

3. The children should see if they can find a tree stump or log that has just been cut. Try to count the rings back to when they were born, and to not the place when your parents were born. Were those years wet or dry?
The student will explain the advantages and disadvantages of dating methods. (tree ring, strategraphy, fossil correlation carbon 14, argon, aud document dating)

C. Scientists employ similar processes in their pursuit of knowledge of the past.

1. Develop a list of personal qualities they saw in the Dr. Leakey film, of the archaeologist. (dedication, hard worker, etc.)

2. From the list above, identify his own personal qualities that are related to an archaeologist.

3. Examine Archaeologist's Notes pamphlet of The House of Ancient Greece and Selections from Field Notes, Education Development Center, Inc.

4. Field trip to Aztalon State Park. Take notes on priorities previously developed in the class room. (location, items seen, etc.)

D. Present day primitive societies serve as models in the investigation of life styles of early man.

1. View Primitive Man in Our World F-841 showing primitive life as it exists in New Guinea. Compare and contrast how this way of life with a past primitive culture.

2. The children should attempt to identify elements in a modern day primitive culture which are reported to have existed in an early primitive culture.
The children could make a report on contemporary culture and emphasize their differences and similarities with an early primitive culture.
Using the same report the student should be able to identify factors in the contemporary culture which serve as clues to the life-style of ancient primitive cultures.

3. Investigate life style of Hopi Indians. Groups of students could research food-gathering, social life, etc.

OPEN ENDED COMMENTS

I. UNIT: _____

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II. CONCEPTS: _____

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III. OBJECTIVES: _____

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IV. MATERIALS: _____

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V. ACTIVITIES: _____

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VI. COMMENTS: (USE BACK IF NECESSARY) _____

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WHO IS MAN?--WHO AM I?

WHO IS MAN?--WHO AM I?

I CONCEPTS:

A. MAN IS SIMILAR IN MANY RESPECTS TO OTHER ANIMALS.

1. His basic needs are fulfilled through interaction with the environment; his dependence upon it.

2. He responds to external stimuli.

3. He exhibits aggression and fear.

4. He enters into relationships with other individuals and groups.

B. MAN IS CHARACTERIZED BY CERTAIN UNIQUE CAPACITIES.

1. He stands upright and can grasp.

2. He weighs present behavior on the basis of past experience and future consequence; he exhibits self-direction.

3. He uses abstract symbols to communicate across time and space.

4. He studies himself.

5. He creates. He destroys.

6. He empathizes with other living things.

7. He expresses concern for unborn generations.

C. MAN'S UNIQUE ABILITIES ARE REFLECTED IN HIS ACHIEVEMENTS; HIS VALUES ARE REFLECTED IN HIS CULTURE.

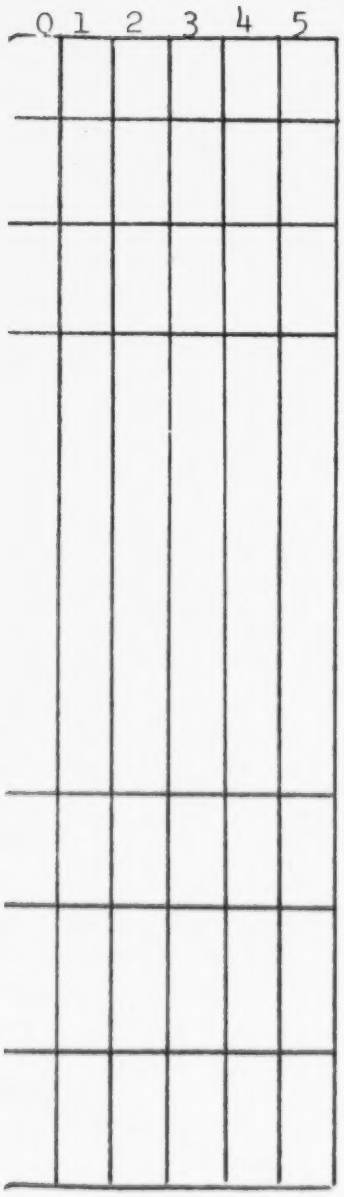
CONCEPT "A"

MAN IS SIMILAR IN MANY RESPECTS TO OTHER ANIMALS.

. His basic needs are fulfilled through interaction with the environment; his dependence upon it.

. He responds to external stimuli.

- He exhibits aggression and fear.
- He enters into relationships with other individuals and groups.



II OBJECTIVES FOR CONCEPT A:

A. THE CHILD IS ABLE TO IDENTIFY STIMULUS RESPONSES, THROUGH EXPERIMENTATION, FOR AN ANIMAL.

B. THE STUDENT IS ABLE TO ANALYZE MAN'S MISINTERPRETATION OF ANIMAL BEHAVIOR.

C. THE STUDENT SHOULD BE ABLE TO COMPARE AND CONTRAST THE PHYSIOLOGICAL SYSTEMS OF A FROG AND A HUMAN.

D. USING AN ANIMAL OF HIS CHOICE, THE STUDENT IS ABLE TO COMPARE AND CONTRAST THE FOLLOWING CATEGORIES WITH THE HUMAN:

- life cycles
- social group (family roles, family behavior)
- emotions and feelings
- methods of communicating
- ability to manipulate their environment
- structural adaptability
- cooperation
- Sources of conflicts: in and/or between groups
- basic needs

E. THE STUDENT IS ABLE TO LIST BASIC HUMAN NEEDS WHICH HAVE PERSISTED THROUGHOUT TIME.

F. THE STUDENT IS ABLE TO IDENTIFY LEARNED BEHAVIORS, FEELINGS, PERSONALITY TRAITS, AND BE ABLE TO SUPPORT INFERENCES ABOUT AN ANIMAL'S BEHAVIOR.

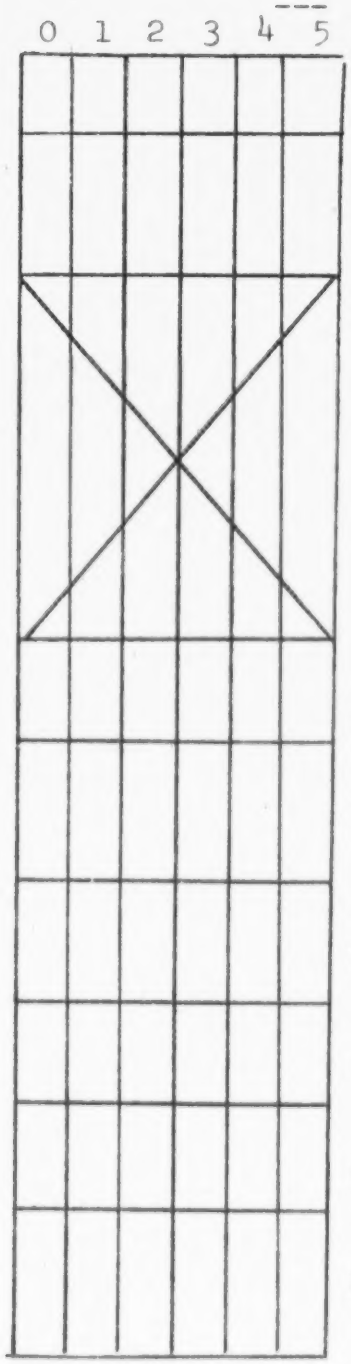
G. THE STUDENT IS ABLE TO COMPARE AND CONTRAST THE INTERACTION OF A WILD ANIMAL WITH HIS ENVIRONMENT WITH THE INTERACTION OF A HUMAN WITH HIS ENVIRONMENT.

CONCEPT "B"

MAN IS CHARACTERIZED BY CERTAIN UNIQUE CAPACITIES.

- He stands upright and can grasp.
- He weighs present behavior on the basis of past experience and future consequence; he exhibits self-direction.

- He uses abstract symbols to communicate across time and space.
- He studies himself.
- He creates. He destroys.
- He empathizes with other living things.
- He expresses concern for unborn generations.



OBJECTIVES FOR CONCEPT "B"

A. THE STUDENT IS ABLE TO CONCLUDE ABOUT THOSE UNIQUE MENTAL CAPACITIES THAT CHARACTERIZE MAN.

B. GIVEN A SET OF CHARACTERISTICS WHICH APPEAR TO DESCRIBE MAN'S UNIQUE CAPACITIES, HE IS ABLE TO SELECT ONE AND GATHER EVIDENCE TO SUPPORT OR REFUTE IT.

1. Man weighs behavior on the basis of past experience or expected future consequences.
2. Man expresses concern for unborn generations.
3. Man's unique abilities are reflected in his achievements.
4. Man studies himself.

C. THE STUDENT IS ABLE TO EVALUATE MAN'S "MOST CREATIVE ACTS" . . . HIS "MOST DESTRUCTIVE ACTS."

D. THE STUDENT IS ABLE TO TRACE THE HISTORICAL DEVELOPMENT OF COMMUNICATION, CITING MAJOR CONTRIBUTIONS OF EACH HISTORICAL SOCIETY.

E. THE STUDENT IS ABLE TO IDENTIFY FUNDAMENTAL ELEMENTS OF THE COMMUNICATION PROCESS.

F. THE STUDENT IS ABLE TO EVALUATE A "MEANS" OF COMMUNICATION IN TURNS OF ITS ADVANTAGES AND DISADVANTAGES.

G. THE STUDENT IS ABLE TO EVALUATE A MEANS OF COMMUNICATION IN TERMS OF ITS IMPACT UPON PEOPLE.

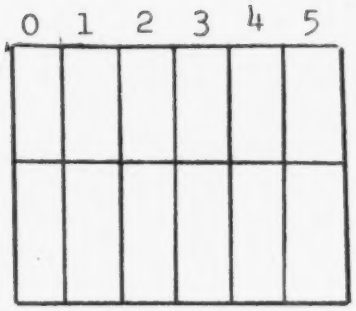
H. THE STUDENT IS ABLE TO IDENTIFY HUMAN PROBLEMS WHICH HAVE PERSISTED THROUGH ALL TIME IF IT IS TO JUSTIFY HIS SELECTION.

4

CONCEPT "C"

MAN'S UNIQUE ABILITIES ARE REFLECTED IN HIS ACHIEVEMENTS; HIS VALUES ARE REFLECTED IN HIS CULTURE.

IV OBJECTIVES FOR CONCEPT "C"



A. THE STUDENT IS TO IDENTIFY VALUES POSSESSED BY REPRESENTTIVE HISTORICAL CULTURES AND IS TO CITE EVIDENCE TO SUPPORT THAT IDENTIFICATION.

B. THE STUDENT IS ABLE TO ANALYZE VALUES OF A REPRESENTATIVE HISTORICAL CULTURE IN TERMS OF FACTORS WHICH POSSIBLY MOTIVATED THEM.

V SUGGESTED ACTIVITIES:

A. STUDENTS MIGHT ANALYZE MAN'S MISINTERPRETATION OF ANIMAL BEHAVIOR. INVESTIGATE WHY ANIMALS ARE LABELED AS "BAD" (i.e., WOLVES, HAWKS, INSECTS, ETC.) HOW HAS MAN MANIPULATED ANIMAL BEHAVIOR? (i.e. "WALT DISNEY" SYNDROME WHERE MAN HUMANIZES ANIMAL BEHAVIOR OR FABLES IN WHICH MAN ANIMALIZES HUMAN BEHAVIOR.)

B. THE STUDENT MIGHT OBSERVE AND DRAW INFERENCES ABOUT A "PET'S" BEHAVIOR USING THE FOLLOWING CRITERION:

1. Are the behaviors repetitive?

2. What caused it to behave in a certain way?

3. How did it react to stimulus?

4. To what degree are man's biases present in the interpretation of the animal's behavior?

C. GIVEN A GENERALIZATION ABOUT A BREED OF ANIMAL, ex., "SIAMESE CATS ARE COLD AND UNFRIENDLY," GERMAN SHEPHERDS ARE VICIOUS," "SMALL DOGS ARE VERY NERVOUS," "ST. BERNARDS ARE GOOD WITH CHILDREN," "MONGREL DOGS ARE FRIENDLIER THAN PUREBREEDS," HAVE THE STUDENT SUPPORT OR REFUTE THE STATEMENT BASED UPON PRIMARY AS WELL AS SECONDARY RESEARCH.

D. THE STUDENT COULD INVESTIGATE STIMULUS RESPONSE BY EXPERIMENTING WITH SUCH SIMPLE ANIMALS AS MEALWORMS, DAPHNIA, HYDRA, GOLDFISH, OR WORMS. E.S.S. BOOKLETS, MEALWORM BEHAVIOR OR CRAYFISH PROVIDE SOME INTERESTING SUGGESTIONS.

E. THE HARCOURT BRACE SCIENCE SERIES, CONCEPTS IN SCIENCE 6, PROVIDES AN ACTIVITY-FILLED CHAPTER ON "HOW WE LEARN."

IT FOCUSES UPON STIMULUS RESPONSE, LEARNED AND INSTINCTIVE BEHAVIOR, REFLEX ACTS, AND HABIT GOAL LEARNING.

F. INTERVIEWS WITH OWNERS OF PETS, AND/OR VETERINARIANS WILL PROVIDE CHILDREN WITH AN OPPORTUNITY TO COLLECT MORE PRIMARY EVIDENCE.

G. THIS UNIT PROVIDES NUMEROUS OPPORTUNITIES FOR INDEPENDENT STUDY OF ANIMAL BEHAVIOR. A STUDENT MIGHT INVESTIGATE SUCH TOPICS AS:

- Baboon Troop
- The Caribou
- Musk Ox
- Wolves
- Lions
- Bees
- Ants

OPEN ENDED COMMENTS

I. UNIT: _____

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II. CONCEPTS: _____

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III. OBJECTIVES: _____

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VI. COMMENTS: (USE BACK IF NECESSARY) _____

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Man Needs Man

I. Concepts

A. Man uses a high level of social organization to fulfill his needs.

B. A group is defined in terms of activity, interraction, and norms.

. Individuals within a group influence group norms.

. Individual behavior is influenced by group norms.

. Members within a group may assume different roles.

C. Differences in individual and group goals frequently result in conflict.

. Individual-individual.

. Individual-individual within a group.

. Individual-group.

. Group-group.

D. Problem solving strategies can help in the resolution of conflicts; a willingness to consider the viewpoints of others is an essential element of problem solving strategies.

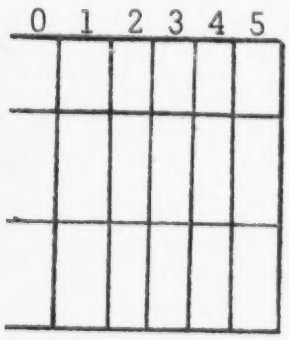
E. Conflict can precipitate change within a group.

F. Change is a permanent characteristic of man's social organizations.

G. When individual and group goals are synonymous, group effectiveness is increased. It must, however identify and tap appropriate resources in order to fulfill its goals.

II. Objectives

A. Modern man uses a high level of social organization to fulfill his needs.



1. The student is able to identify group and their motives for existence within historical cultures.

2. The student is able to compare and contrast the social organization of a contemporary primitive and a contemporary technological culture.

3. The student is able to identify his personal needs which are fulfilled by groups.

B. The group is defined in terms of activity, interraction, and norms.

. Individuals within a group influence group norms.

. Individual behavior is influenced by group norms.

. Members within a group may assume different roles.

0 1 2 3 4 5

1. Given a problem solving committee task, the student is able to analyze the group in terms of activity (effectiveness), conflict (structure, pressure), norm (expected behavior), roles, and procedures.

2. The student is able to identify factors which might have influenced the role definition of an individual within a historical culture.

3. The student is able to support, with evidence, his ideas about the role of a 6th grade boy or girl, or mother/father; is able to identify factors that influence the role definition of a 6th grade boy, girl/ ideal mother-father:

   a. individual influences
   b. group influences
   c. physical/emotional influences
   d. experiences and interests

4. The child is able to analyze individual contributions:

   a. made by himself
   b. made by others to a group task.

5. The child is able to assume a variety of roles within a group.

C. Differences in individual and group goals frequently result in conflict.

- Individual-individual.
- Individual-individual within a group.
- Individual-group
- Group-group

0 1 2 3 4 5

1. The student is able to explain the interelationships (compatability, conflict) between a variety of groups to which an individual belongs (peer groups, clubs, church).

2. The student is able to identify factors that could change the relationships between groups.

3. The student is able to recognize the importance of communication in conflict resolution.

4. The student is able to identify the causitive factors which precipitated conflict throughout history (food, land, religious).

5. The student is able to identify factors which contributed to the termination of a historical conflict.

6. The student is able to identify sources of conflict within his group.

7. The student is able to resolve conflicts within his own groups.

D. Problem solving strategies can help in the resolution of conflicts; a willingness to consider the viewpoints of others is an essential element of problem solving strategies.

1. The student is able to design and implement a problem solving strategy from a committee experience:

a. identify cause of a conflict
b. list all possible alternatives
c. evaluate alternatives
d. arrive at a decision-making method
e. make decision
f. evaluate decision in terms of effectiveness

0 1 2 3 4 5

2. Given a historical conflict, the child is able to apply his problem solving strategy to arrive at a resolution.

E. Conflict can precipitate change within a group.

1. The student is able to identify factors which precipitated great change within the social structure of:

   a. historical cultures
   b. contemporary society

   (i.e. individuals, events, natural causes, inventions, ideas, discoveries)

2. The student is able to evaluate the factors that <u>most</u> influenced change within the historical society.

3. The student is able to cite examples in which conflict resulted in:

   a. positive change
   b. negative change

F. Change is a permanent characteristic of man's social organizations.

The student is able to identify social organizations which he feels have not changed appreciably over time ... have undergone great change.

G. When individual and group goals are synonymous, group effectiveness is increased; it must, however, identify and tap appropriate resources in order to fulfill its goals.

1. The student is able to select a group which he feels is effective and evaluate it in terms of the congruency of group-individual goals.

2. The student is able to identify groups which he feels are ineffective and cite reasons for ineffectiveness.

   The student is able to evaluate the effectiveness of own groups when engaged in a problem solving task.

OPEN ENDED COMMENTS

I. UNIT: _____

II. CONCEPTS: _____

III. OBJECTIVES: _____

IV. MATERIALS: _____

V. ACTIVITIES: _____

VI. COMMENTS: (USE BACK IF NECESSARY) _____

ADDITIONAL OPEN ENDED EVALUATION SHEETS

OPEN ENDED COMMENTS

I. UNIT: _____

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II. CONCEPTS: _____

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III. OBJECTIVES: _____

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IV. MATERIALS: _____

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V. ACTIVITIES: _____

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VI. COMMENTS: (USE BACK IF NECESSARY) _____

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OPEN ENDED COMMENTS

I. UNIT: _____

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II. CONCEPTS: _____

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III. OBJECTIVES: _____

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IV. MATERIALS: _____

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V. ACTIVITIES: _____

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VI. COMMENTS: (USE BACK IF NECESSARY) _____

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OPEN ENDED COMMENTS

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II. CONCEPTS: _____

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III. OBJECTIVES: _____

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VI. COMMENTS: (USE BACK IF NECESSARY) _____

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V. ACTIVITIES: _____

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OPEN ENDED COMMENTS

I. UNIT: _____

II. CONCEPTS: _____

III. OBJECTIVES: _____

IV. MATERIALS: _____

V. ACTIVITIES: _____

VI. COMMENTS: (USE BACK IF NECESSARY) _____

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II. CONCEPTS: _____

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III. OBJECTIVES: _____

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V. ACTIVITIES: _____

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VI. COMMENTS: (USE BACK IF NECESSARY) _____

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OPEN ENDED COMMENTS

I. UNIT: _____

II. CONCEPTS: _____

III. OBJECTIVES: _____

IV. MATERIALS: _____

V. ACTIVITIES: _____

VI. COMMENTS: (USE BACK IF NECESSARY) _____

OPEN ENDED COMMENTS

I. UNIT: _____

II. CONCEPTS: _____

III. OBJECTIVES: _____

IV. MATERIALS: _____

V. ACTIVITIES: _____

VI. COMMENTS: (USE BACK IF NECESSARY) _____

OPEN ENDED COMMENTS

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V. ACTIVITIES: _____

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VI. COMMENTS: (USE BACK IF NECESSARY) _____

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OPEN ENDED COMMENTS

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II. CONCEPTS: _____

III. OBJECTIVES: _____

IV. MATERIALS: _____

V. ACTIVITIES: _____

VI. COMMENTS: (USE BACK IF NECESSARY) _____